

First Report of Foliar Infection of *Maianthemum racemosum* by *Phytophthora*

ramorum. D. Hüberli, K. L. Ivors, A. Smith, J. G. Tse, and M. Garbelotto. Department of ESPM-ES, 151 Hilgard Hall, University of California, Berkeley 94720. Plant Dis. 89:204, 2005; published on-line as DOI: 10.1094/PD-89-0204C. Accepted for publication 22 November 2004.

In May 2003, *Phytophthora ramorum* S. Werres & A.W.A.M. de Cock was isolated from the leaf tips of a single plant of false Solomon's seal (*Maianthemum racemosum* (L.) Link, formerly known as *Smilacina racemosa* (L.) Desf.), a native, herbaceous perennial of the Liliaceae family, at the Jack London State Park in Sonoma County, California. Affected leaves had cream-to-brown lesions on the tips that were delimited by a yellow chlorotic zone. Lesions on the stems were not observed. The isolate (American Type Culture Collection [ATCC], Manassas, VA, MYA-3280; Centraal Bureau voor Schimmelcultures, Baarn, the Netherlands, CBS 114391) was typical of *P. ramorum* with large chlamydospores and caduceus, semipapillate sporangia, and the sequence (GenBank Accession No. AY526570) of the internal transcribed spacer region of the rDNA matched those published previously (4). The site, from which wood rose (*Rosa gymnocarpa*) was recently identified as a host, is a mixed forest containing confirmed *P. ramorum*-infected coast redwood (*Sequoia sempervirens*), California bay laurel (*Umbellularia californica*), and tanoak (*Lithocarpus densiflora*) trees (2,3). Two leaves per asymptomatic, pesticide free, potted plant of false Solomon's seal were inoculated with zoospores of the *P. ramorum* isolate obtained from infected false Solomon's seal (1). Five plants were inoculated in trial 1, and the following day, three plants were inoculated in trial 2. A control leaf of each plant was dipped in sterile deionized water. Plants were enclosed in plastic bags, misted regularly with sterile distilled water, and maintained at 16 to 21°C in the greenhouse. In both trials, plants did not have lesions on the leaves after 16 days and were reinoculated on separate days for each trial with higher concentrations of zoospores (1×10^5 [trial 1] and 2×10^5 [trial 2] zoospores/ml). Cream-colored lesions, similar to those observed in the field, were evident 1 week after the second inoculation and stopped progressing in both trials by 17 days. Lesions starting from the leaf tips averaged 13 mm (range 8 to 24 mm) long, and *P. ramorum* was reisolated on *Phytophthora*-selective agar medium modified with 25 mg of pentachloronitrobenzene from 44% (trial 1) and 83% (trial 2) of all lesions (4). Control leaves had no lesions, and *P. ramorum* was not reisolated. Sporangia were not observed on any leaves when examined with the dissecting microscope. The fact that lesions developed only after a second inoculation with higher concentrations of zoospores, and these lesions stopped progressing after 17 days, suggests that false Solomon's seal is much less susceptible than other hosts such as western starflower (*Trientalis latifolia*) (1) and wood rose (2). To our knowledge, this is the first report of a plant from the Liliaceae as a natural host for *P. ramorum*, although *Smilax aspersa* was identified as being susceptible in artificial inoculations of detached leaves (E. Moralejo and L. Hernández, *personal communication*). False Solomon's seal is popular in the horticultural industry.

References: (1) D. Hüberli et al. Plant Dis. 87:599, 2003. (2) D. Hüberli et al. Plant Dis. 88:430, 2004. (3) P. E. Maloney et al. Plant Dis. 86:1274, 2002. (4) D. M. Rizzo et al. Plant Dis. 86:205, 2002.